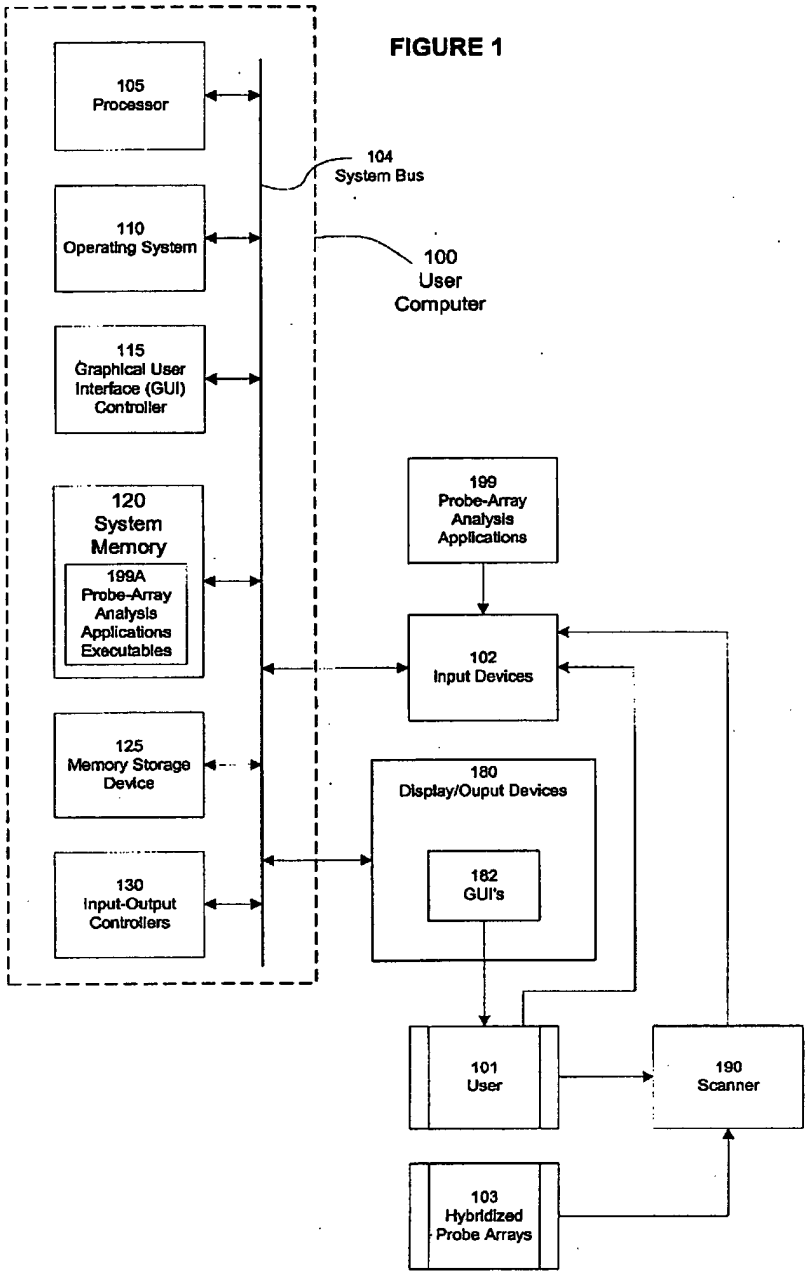

105
Processor
104
System Bus
110
Operating System
100
User
Computer
115
Graphical User
Interface (GUI)
Controller
120
System
Memory
199A
Probe-Array
Analysis
Applications
Executables
199
Probe-Array
Analysis
Applications
102
Input Devices
125
Memory Storage
Device
180
Display/Ouput Devices
182
GUI's
130
Input-Output
Controllers
101
User
190
Scanner
103
Hybridized
Probe Arrays

FIGURE 1

FIGURE 2

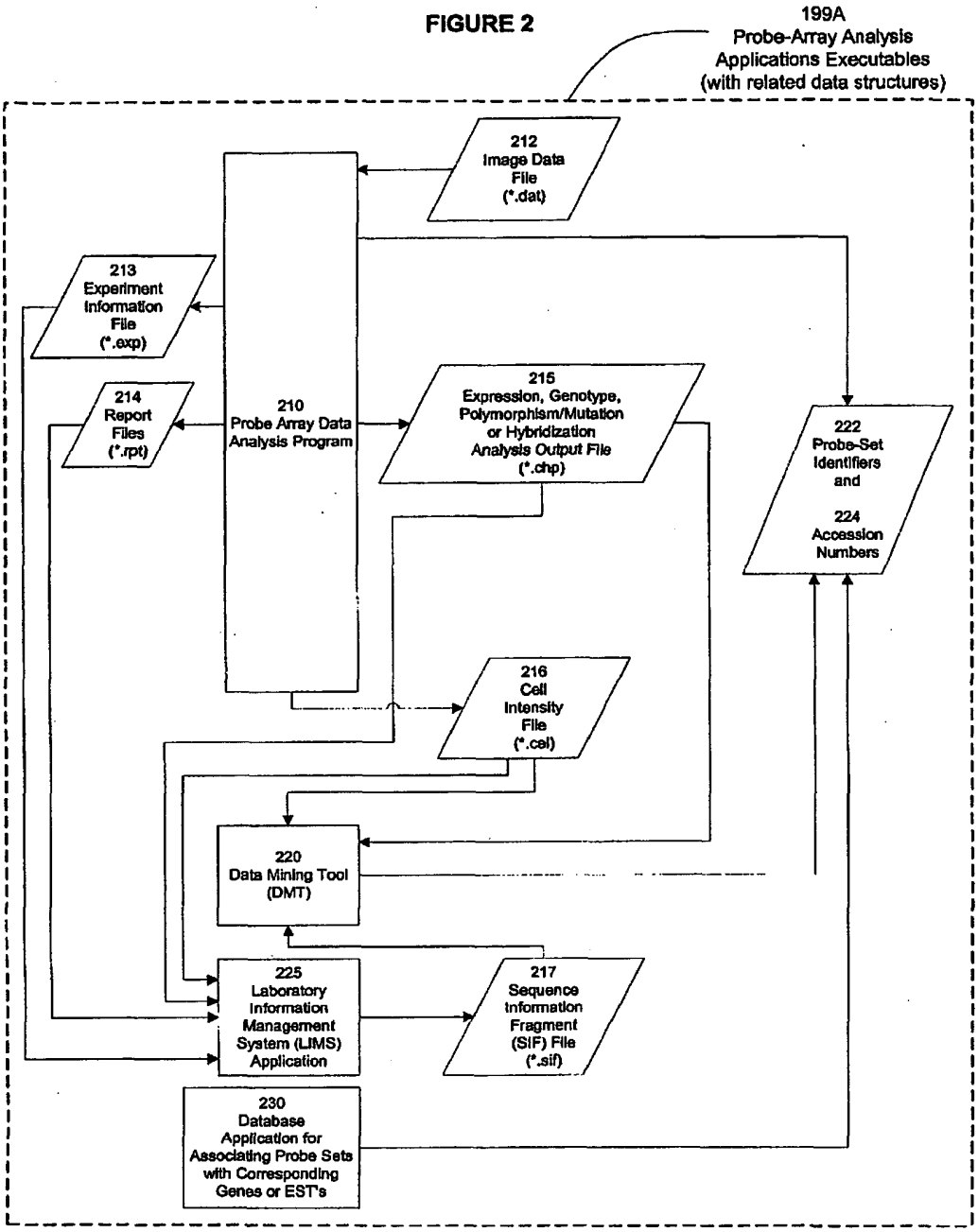
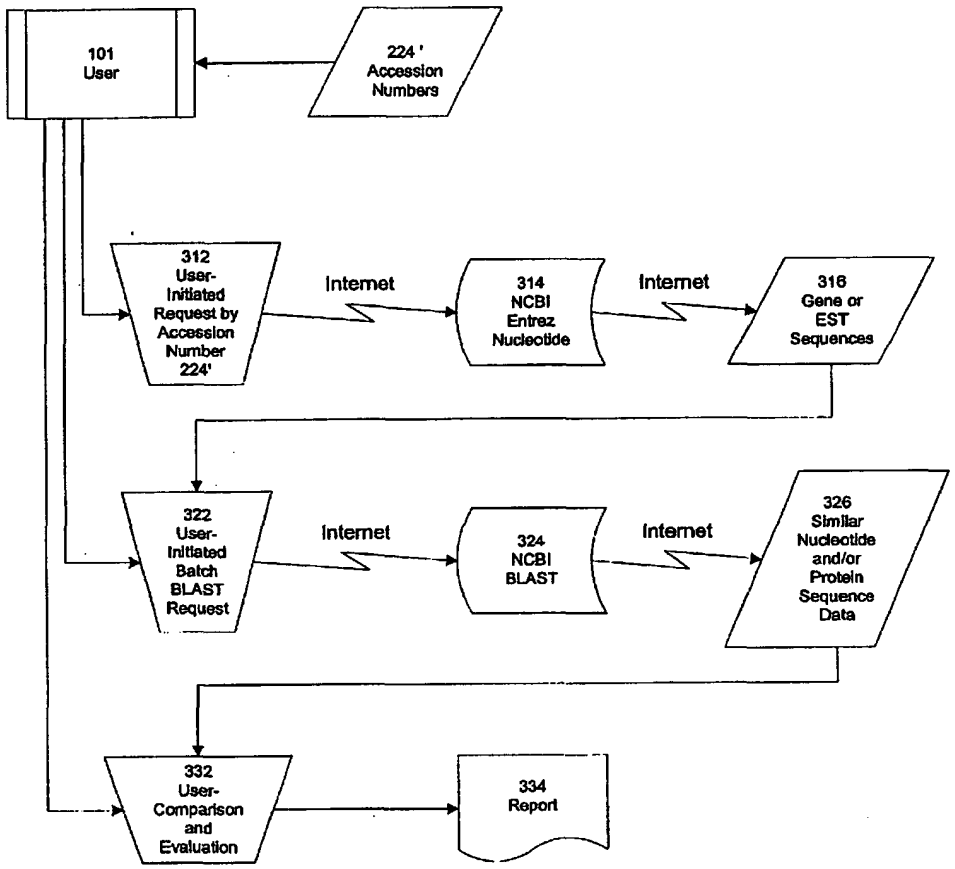
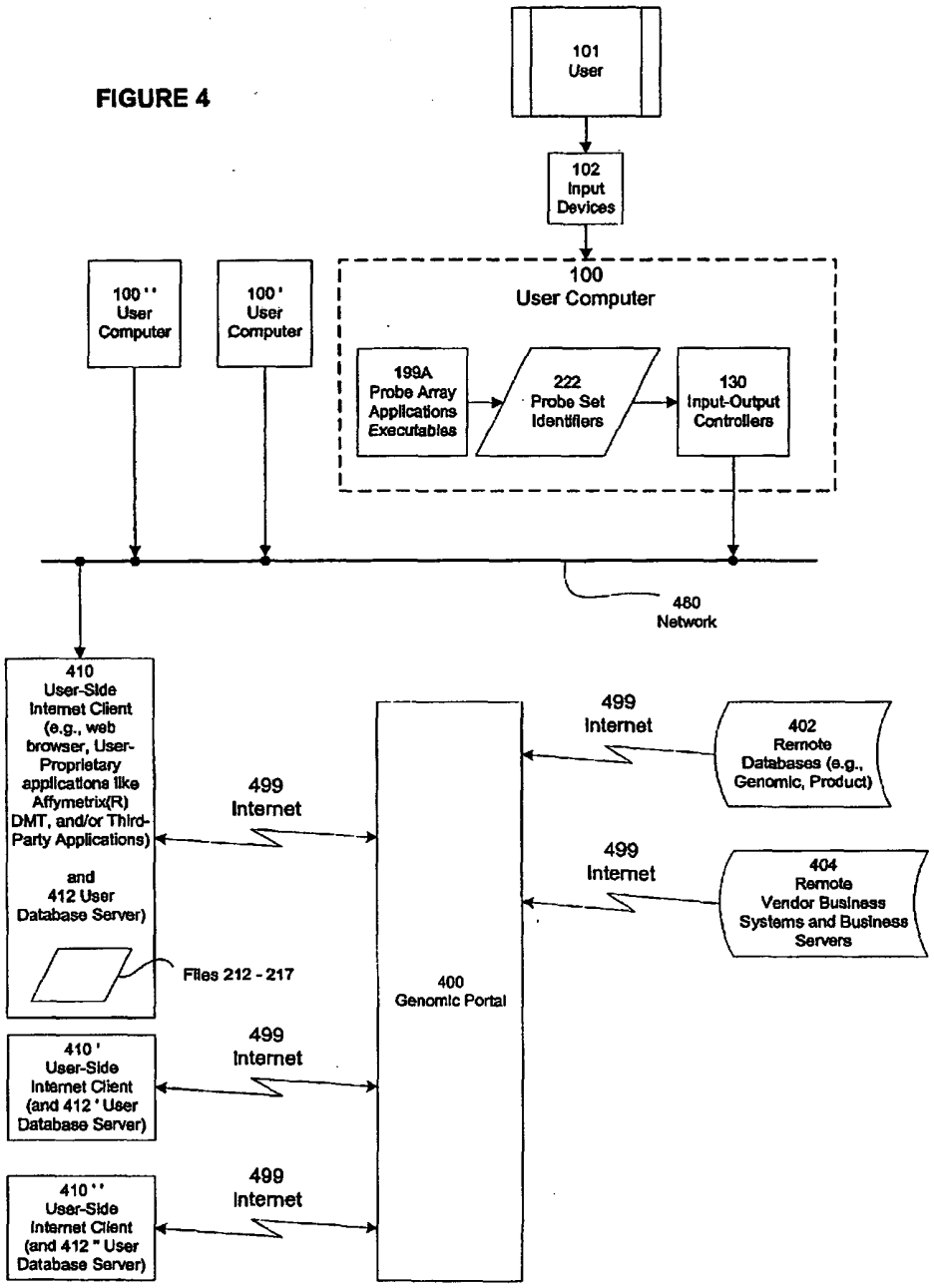

199A
Probe-Array Analysis
Applications Executables
(with related data structures)
212
Image Data
File
(*.dat)
213
Experiment
Information
File
(*.exp)
214
Report
Files
(*.rpt)
210
Probe Array Data
Analysis Program
215
Expression, Genotype,
Polymorphism/Mutation
or Hybridization
Analysis Output File
(*.chp)
222
Probe-Set
Identifiers
and
224
Accession
Numbers
216
Cell
Intensity
File
(*.cel)
220
Data Mining Tool
(DMT)
225
Laboratory
Information
Management
System (LIMS)
Application
217
Sequence
Information
Fragment
(SIF) File
(*.sif)
230
Database
Application for
Associating Probe Sets
with Corresponding
Genes or EST's

FIGURE 3
(PRIOR ART)



Serial No.: 09/943,343

FIGURE 4


101
User
102
Input
Devices
100
User Computer
100''
User
Computer
100'
User
Computer
199A
Probe Array
Applications
Executables
222
Probe Set
Identifiers
130
Input-Output
Controllers
480
Network
410
User-Side
Internet Client
(e.g., web
browser, User-
Proprietary
applications like
Affymetrix(R)
DMT, and/or Third-
Party Applications)
and
412 User
Database Server)
Files 212 - 217
499
Internet
400
Genomic Portal
499
Internet
402
Remote
Databases (e.g.,
Genomic, Product)
499
Internet
404
Remote
Vendor Business
Systems and Business
Servers
410'
User-Side
Internet Client
(and 412' User
Database Server)
499
Internet
410''
User-Side
Internet Client
(and 412 '' User
Database Server)
499
Internet

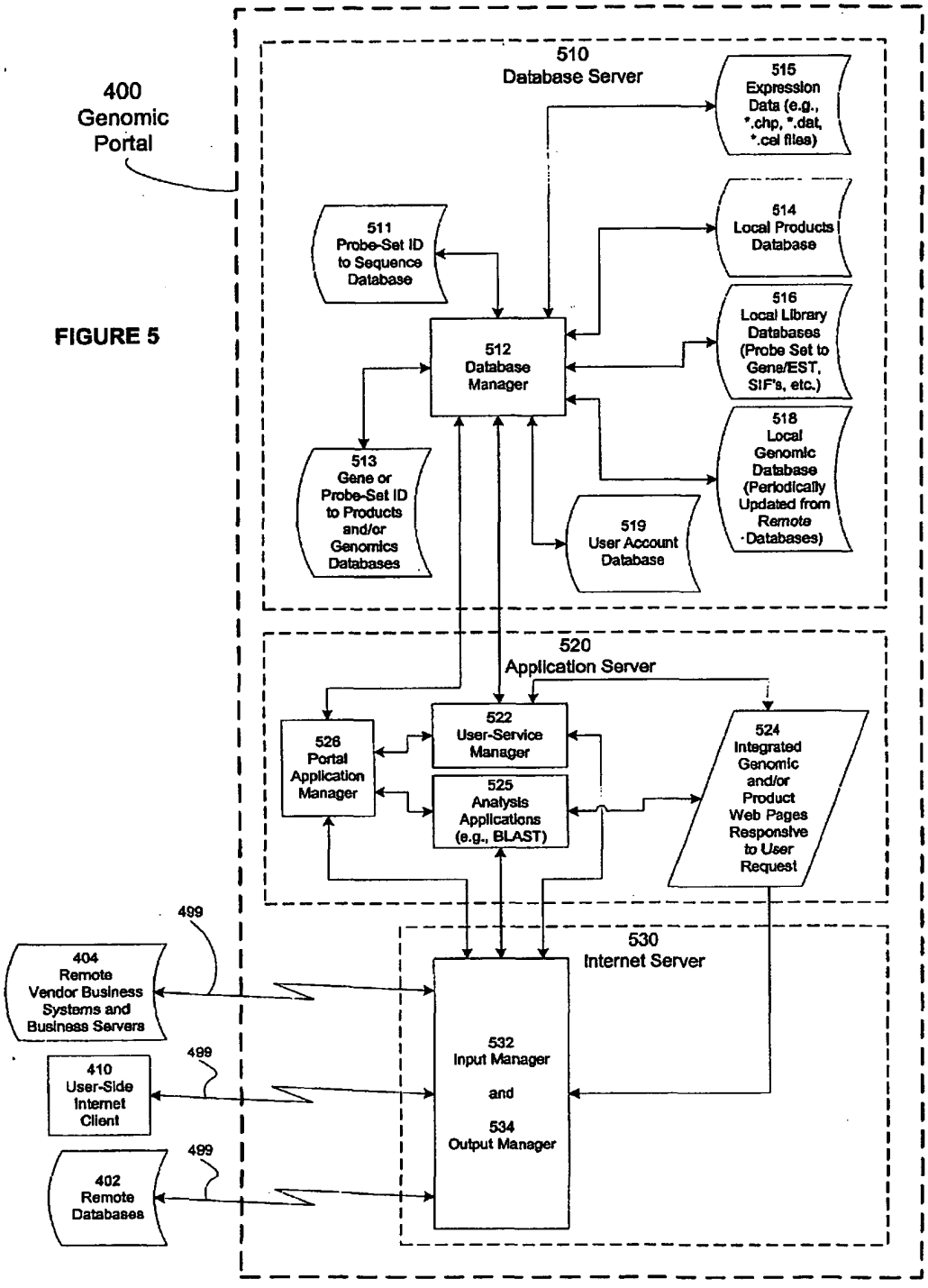

400
Genomic
Portal
510
Database Server
515
Expression
Data (e.g.,
*.chp, *.dat,
*.cel files)
511
Probe-Set ID
to Sequence
Database
514
Local Products
Database
516
Local Library
Databases
(Probe Set to
Gene/EST,
SIF's, etc.)
512
Database
Manager
518
Local
Genomic
Database
(Periodically
Updated from
Remote
Databases)
513
Gene or
Probe-Set ID
to Products
and/or
Genomics
Databases
519
User Account
Database
520
Application Server
526
Portal
Application
Manager
522
User-Service
Manager
525
Analysis
Applications
(e.g., BLAST)
524
Integrated
Genomic
and/or
Product
Web Pages
Responsive
to User
Request
499
530
Internet Server
404
Remote
Vendor Business
Systems and
Business Servers
499
410
User-Side
Internet
Client
499
402
Remote
Databases
532
Input Manager
and
534
Output Manager

FIGURE 5

FIGURE 6

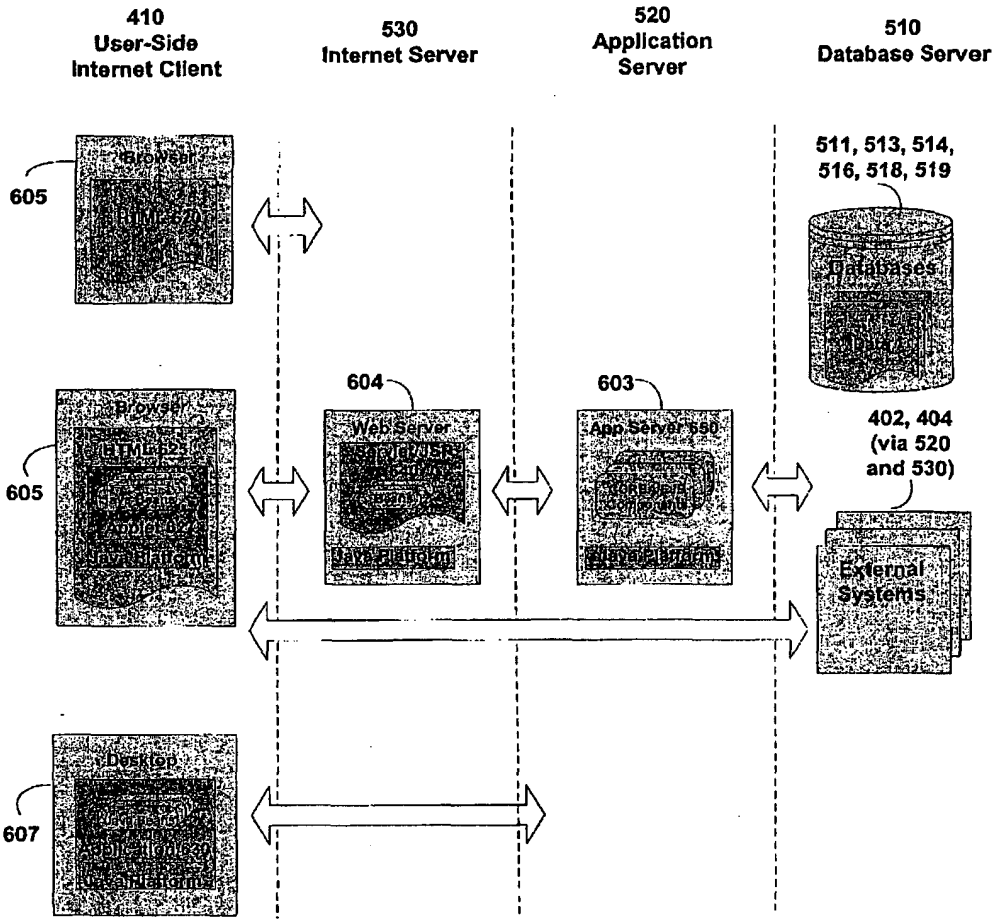
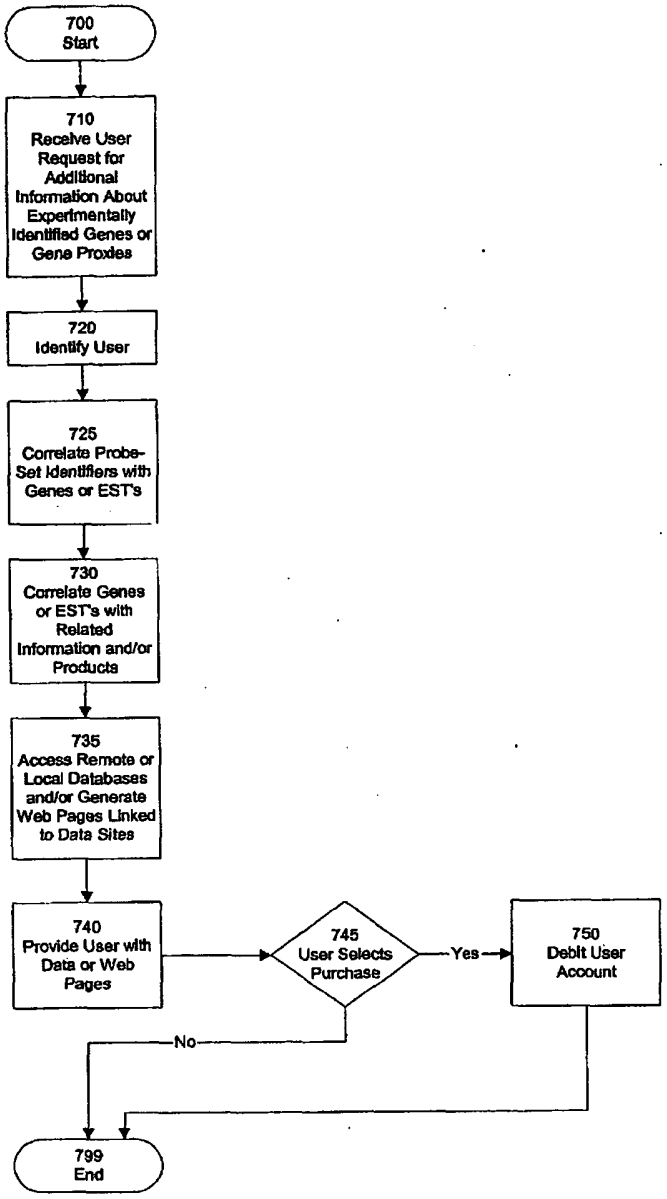
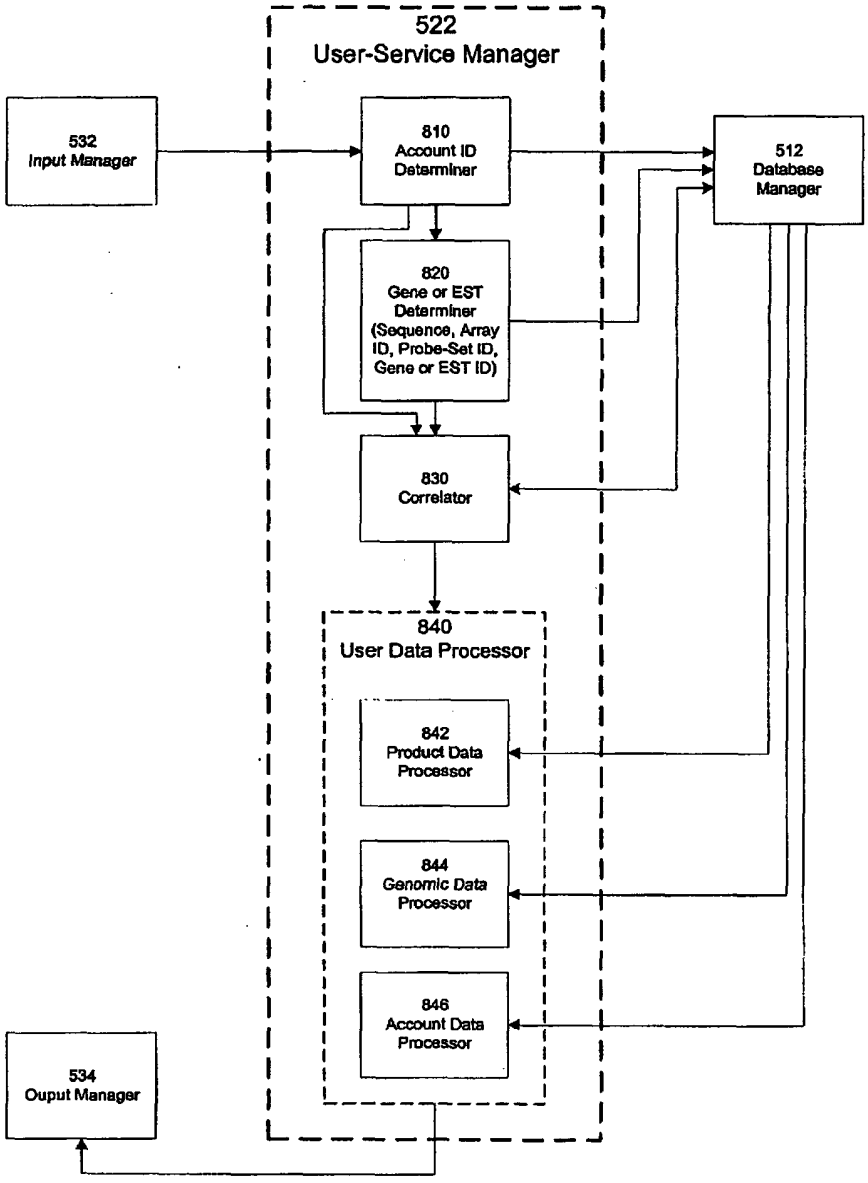

410
User-Side
Internet Client
530
Internet Server
520
Application
Server
510
Database Server
511, 513, 514,
516, 518, 519
Databases
605
Browser
HTML 4.0
604
Web Server
603
App Server 550
402, 404
(via 520
and 530)
External
Systems
605
Browser
HTML 4.0
Java Platform
Web Server
Java Platform
App Server 550
Java Platform
607
Desktop
Java Platform

FIGURE 7



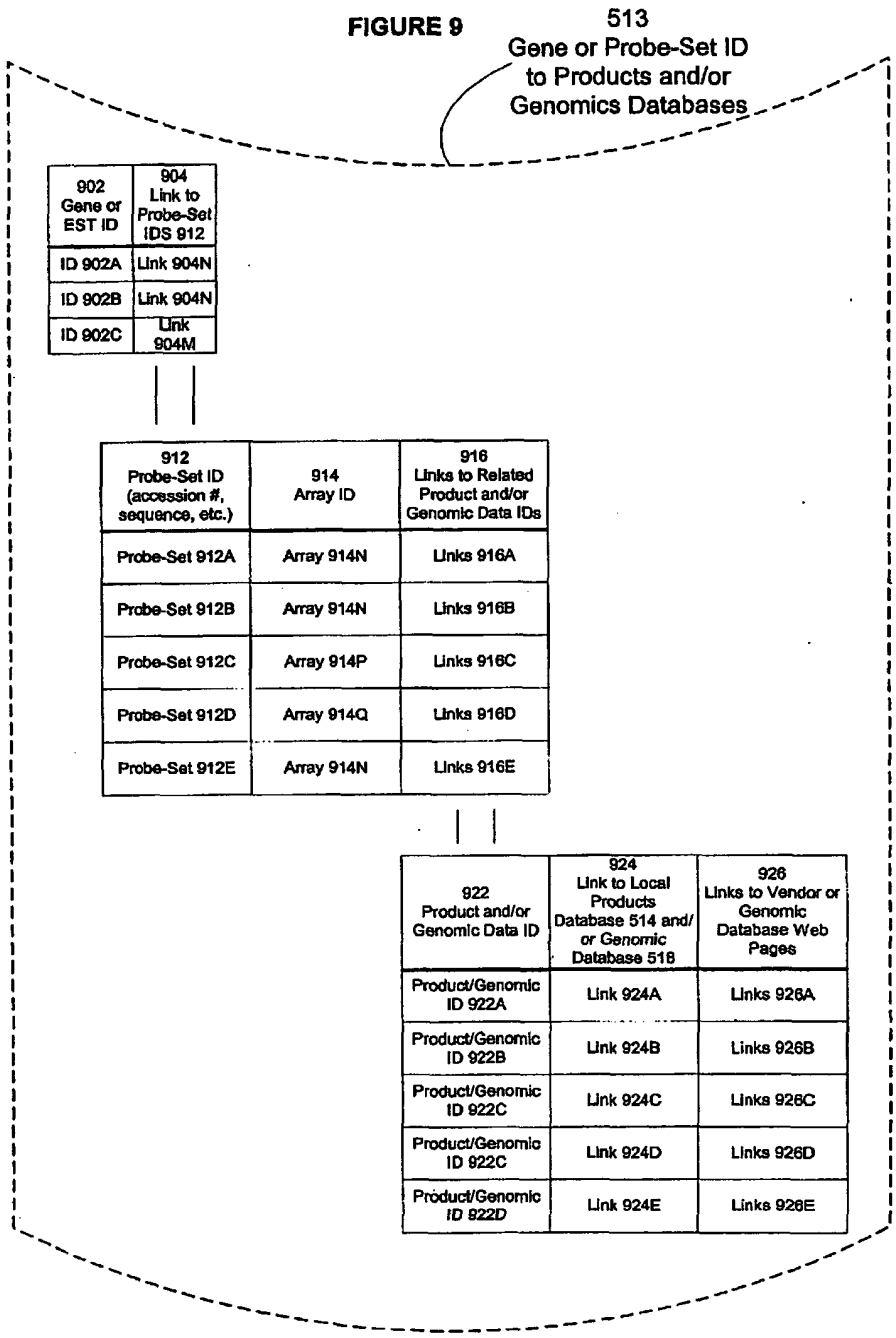
Mar 03 05 03:38p

FIGURE 8



20050282233

FIGURE 9



902 Gene or EST ID	904 Link to Probe-Set IDS 912
ID 902A	Link 904N
ID 902B	Link 904N
ID 902C	Link 904M

912 Probe-Set ID (accession #, sequence, etc.)	914 Array ID	916 Links to Related Product and/or Genomic Data IDs
Probe-Set 912A	Array 914N	Links 916A
Probe-Set 912B	Array 914N	Links 916B
Probe-Set 912C	Array 914P	Links 916C
Probe-Set 912D	Array 914Q	Links 916D
Probe-Set 912E	Array 914N	Links 916E

922 Product and/or Genomic Data ID	924 Link to Local Products Database 514 and/ or Genomic Database 518	926 Links to Vendor or Genomic Database Web Pages
Product/Genomic ID 922A	Link 924A	Links 926A
Product/Genomic ID 922B	Link 924B	Links 926B
Product/Genomic ID 922C	Link 924C	Links 926C
Product/Genomic ID 922C	Link 924D	Links 926D
Product/Genomic ID 922D	Link 924E	Links 926E

Figure 10

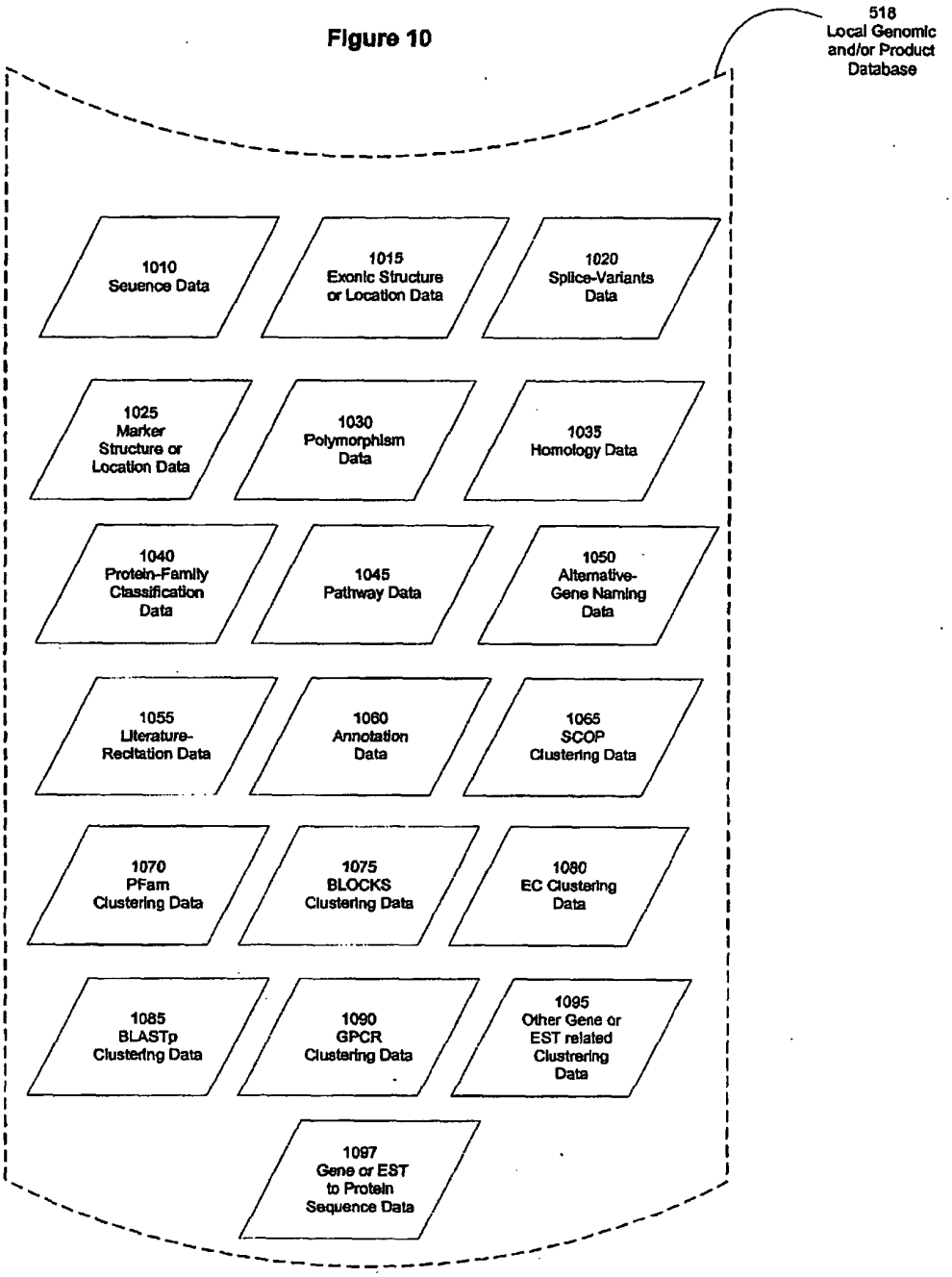

518
Local Genomic and/or Product Database
1010
Seuence Data
1015
Exonic Structure or Location Data
1020
Splice-Variants Data
1025
Marker Structure or Location Data
1030
Polymorphism Data
1035
Homology Data
1040
Protein-Family Classification Data
1045
Pathway Data
1050
Alternative-Gene Naming Data
1055
Literature-Recitation Data
1060
Annotation Data
1065
SCOP Clustering Data
1070
PFam Clustering Data
1075
BLOCKS Clustering Data
1080
EC Clustering Data
1085
BLASTp Clustering Data
1090
GPCR Clustering Data
1095
Other Gene or EST related Clustrering Data
1097
Gene or EST to Protein Sequence Data

Figure 11

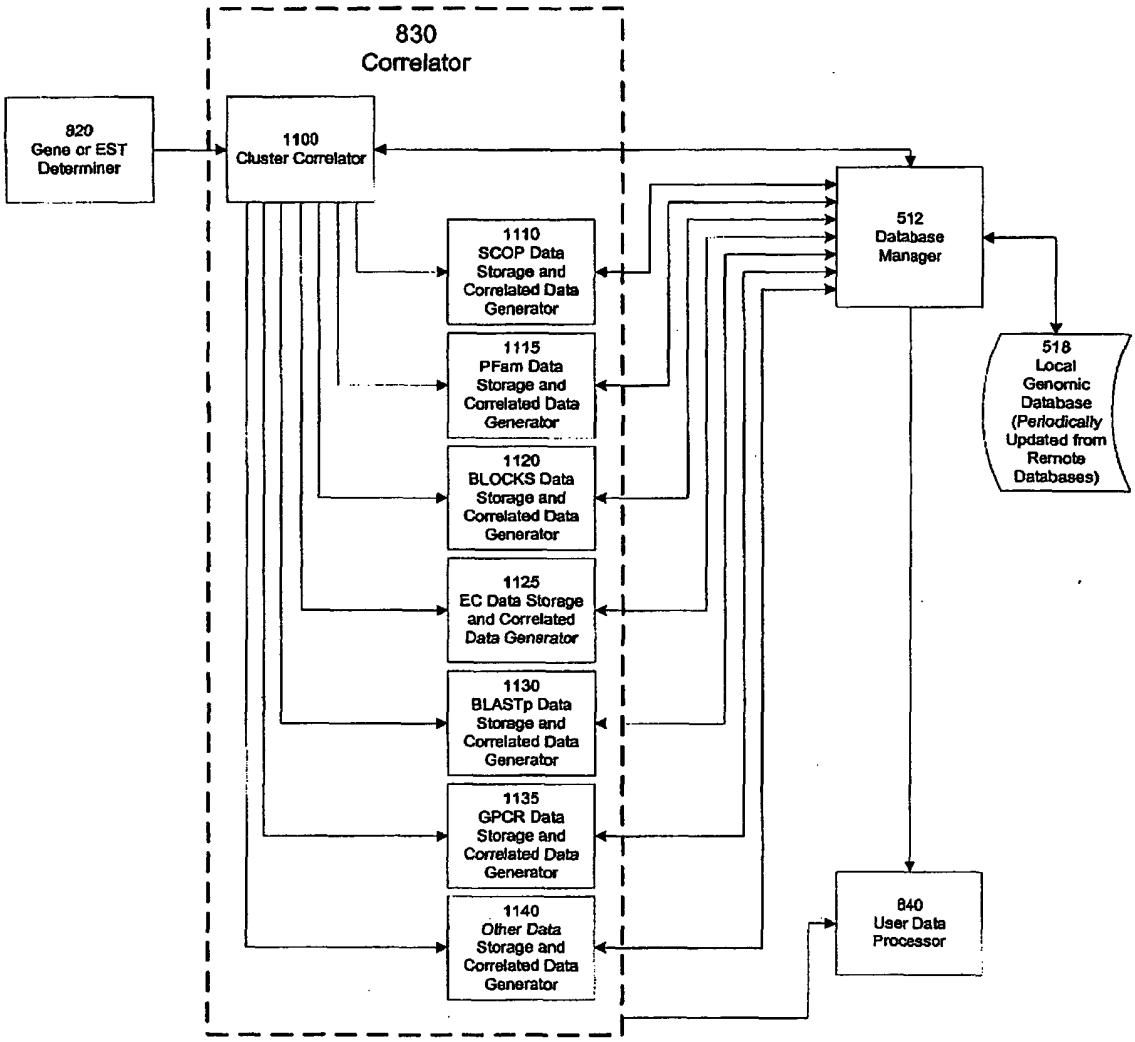
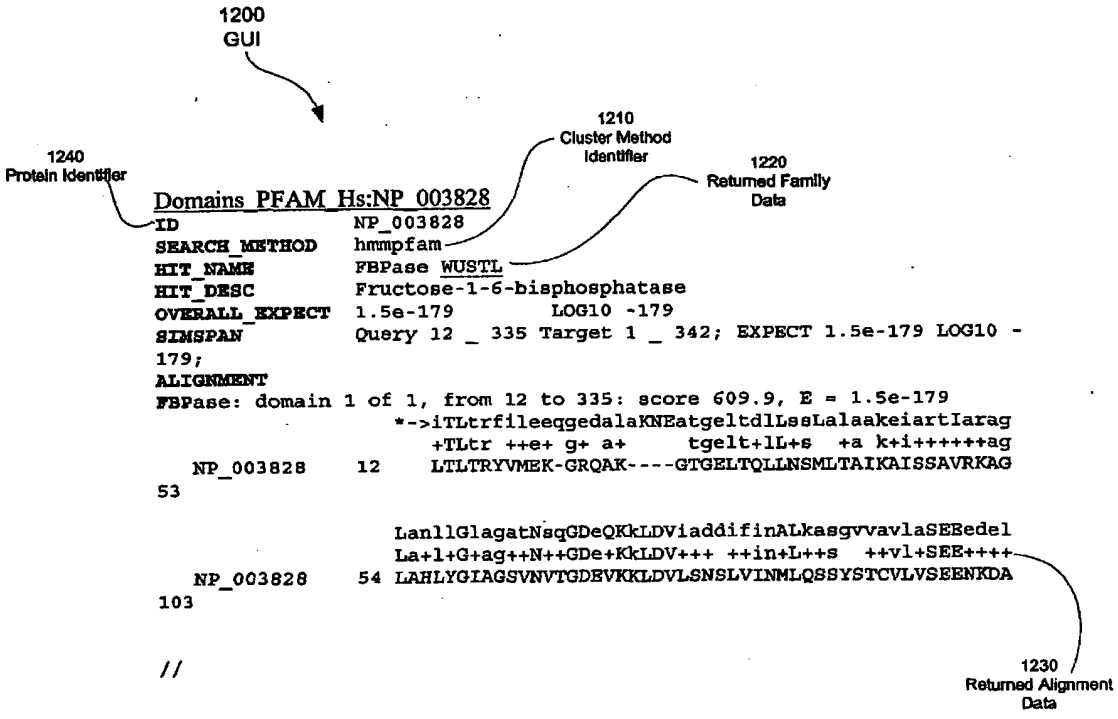

830
Correlator
820
Gene or EST
Determiner
1100
Cluster Correlator
1110
SCOP Data
Storage and
Correlated Data
Generator
1115
PFam Data
Storage and
Correlated Data
Generator
1120
BLOCKS Data
Storage and
Correlated Data
Generator
1125
EC Data Storage
and Correlated
Data Generator
1130
BLASTp Data
Storage and
Correlated Data
Generator
1135
GPCR Data
Storage and
Correlated Data
Generator
1140
Other Data
Storage and
Correlated Data
Generator
512
Database
Manager
518
Local
Genomic
Database
(Periodically
Updated from
Remote
Databases)
840
User Data
Processor

Figure 12


1200
GUI
1210
Cluster Method
Identifier
1240
Protein Identifier
1220
Returned Family
Data
Domains_PFAM_Hs:NP_003828
ID NP_003828
SEARCH_METHOD hmmpfam
HIT_NAME FBPase WUSTL
HIT_DESC Fructose-1-6-bisphosphatase
OVERALL_EXPECT 1.5e-179 LOG10 -179
SIMSPAN Query 12 _ 335 Target 1 _ 342; EXPECT 1.5e-179 LOG10 -
179;
ALIGNMENT
FBPase: domain 1 of 1, from 12 to 335: score 609.9, E = 1.5e-179
*->iTLtrfileeqgedalaKNEatgeltdlLssLalaakeiartIarag
+TLtr ++e+ g+ a+ tgelt+lL+s +a k+i++++++ag
NP_003828 12 LTLTRYVMEK-GRQAK----GTGELTQLLNSMLTAIKAISSAVRKAG
53
LanllGlagatNsqGDeQKkLDViaddifinALkasgvvavlaSEEedel
La+l+G+ag++N++GDe+KkLDV+++ ++in+L++s ++vl+SEE++++
NP_003828 54 LAHLYGIAGSVNVTGDEVKKLDVLSNSLVINMLQSSYSTCVLVSEENKDA
103
//
1230
Returned Alignment
Data